Survival and Development of Zebra Longwing, *Heliconius charithonia*, on native and non-native Passion vines, *Passiflora* sp., in South Florida

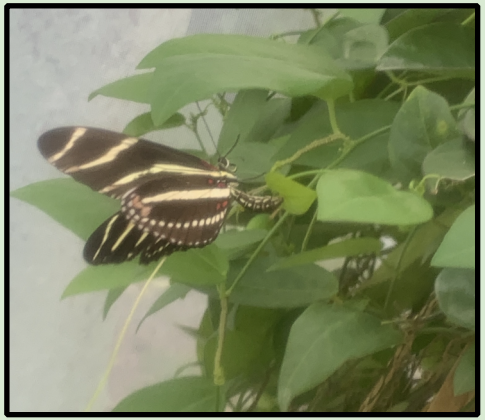
ENVS 4990 A-C Independent Study in Environmental Science

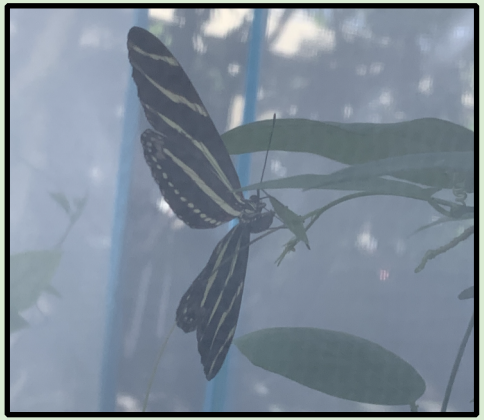
Research Overview

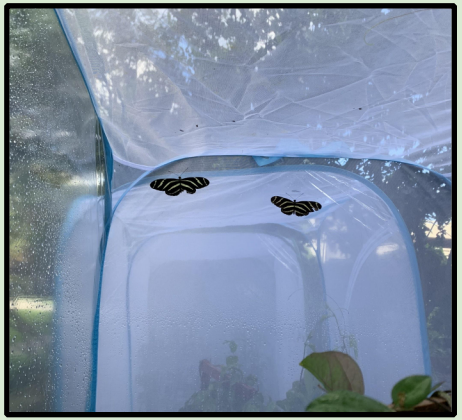
Location: Fort Lauderdale-Davie Campus

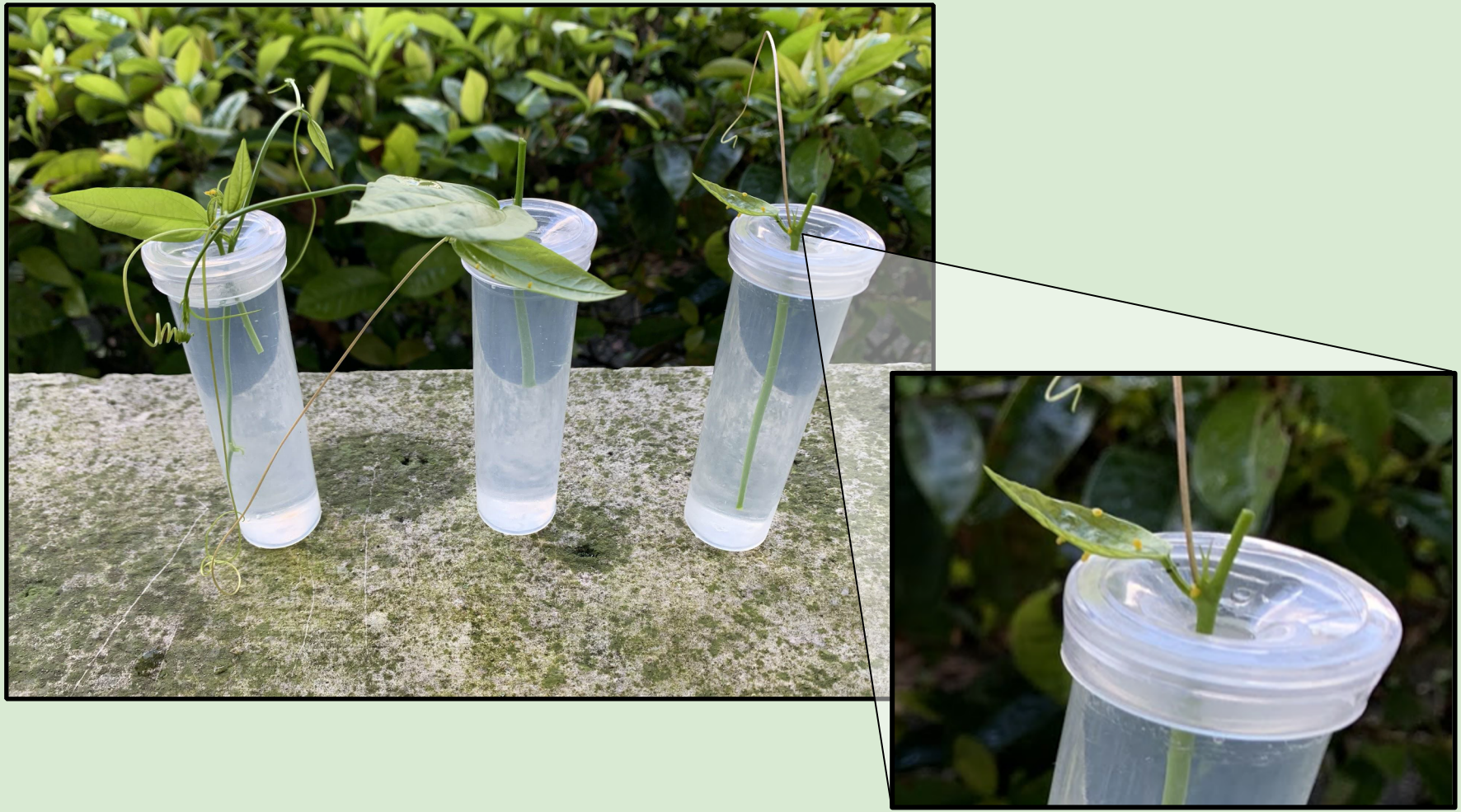
Time frame: Oct. 2019 - Present
(Fall 2019, Winter 2020, Fall 2020 Semesters)

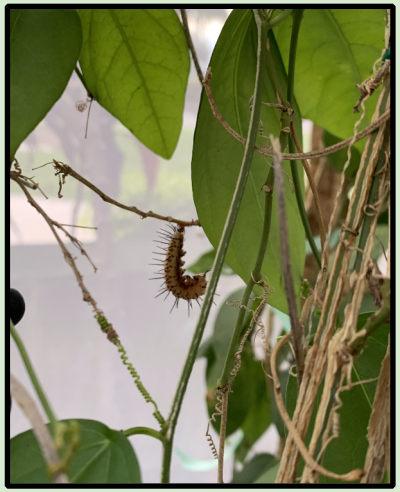
Research: Survival and Development of Zebra Longwing, *Heliconius charithonia*, on native and non-native Passion vines, *Passiflora* sp., in South Florida

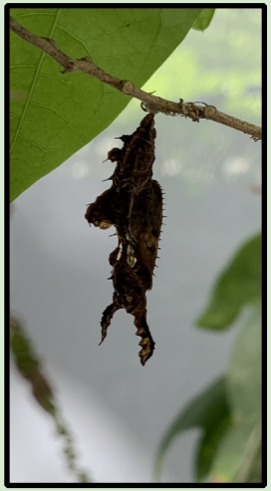


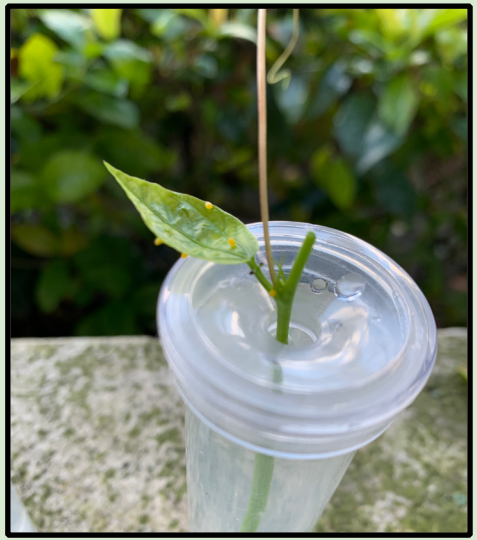


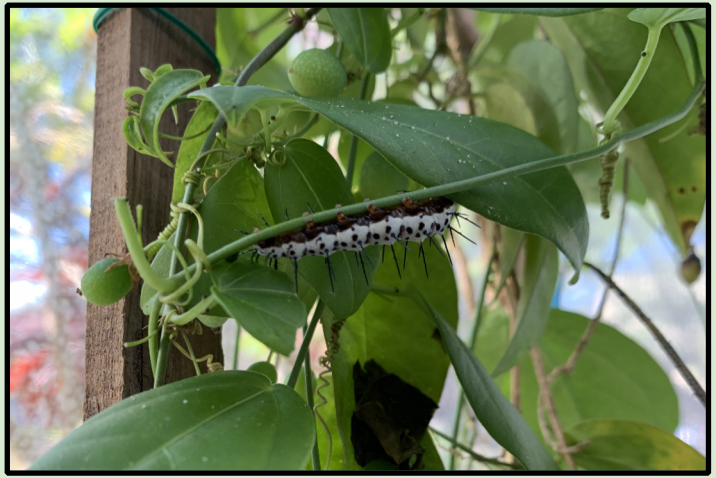


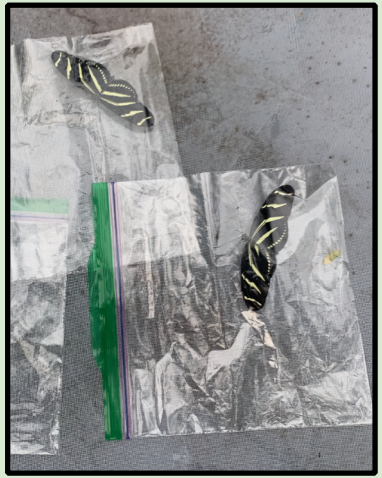


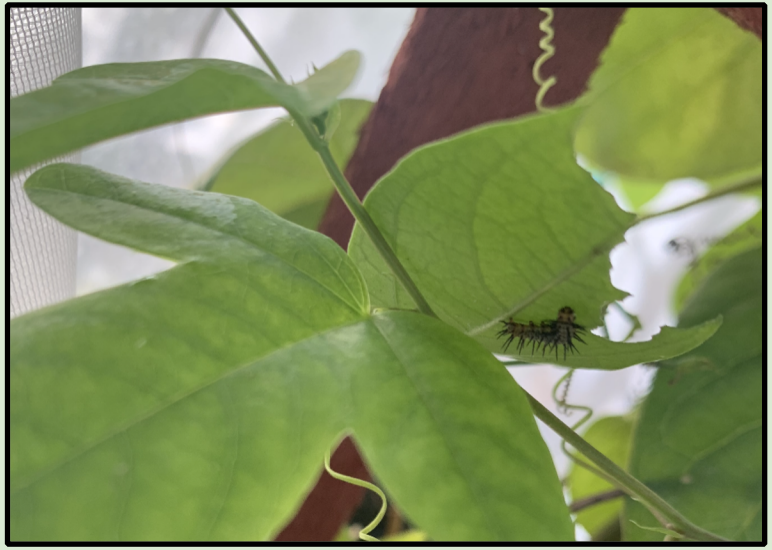


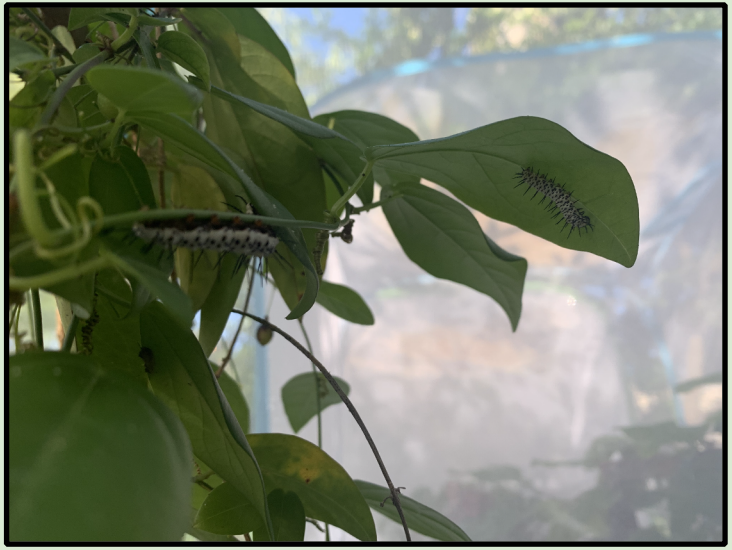












Results

P. caerulea, P. suberosa

Preliminary results of data collected thus far indicated an incompatibility between zebra longwing larvae and the *P. caerulea* passion vine variety, as no zebra longwing caterpillars survived on *P. caerulea*. Butterflies were successfully reared on both *P. suberosa* and *P. incarnata*. Wing lengths of zebra longwings grown on *P. suberosa* were significantly longer than those that were grown on *P. incarnata*. Future studies will include another passion vine species, *P. edulis*, which is the main species grown and sold for fruit consumption.

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Madelyn Rinka
Department of Marine and Environmental Sciences
Halmos College of Natural Sciences and Oceanography

Dr. Paul Arena
Department of Biological Sciences
Halmos College of Natural Sciences and Oceanography

Abstract

Zebra longwing butterflies (*Heliconius charithonia*) are distributed throughout the southernmost regions of the United States to South America and are abundant across Florida. These heliconian butterflies not only consume nectar, but are also known to feed on pollen, resulting in a longer lifespan than most butterflies. In their larval stage, *H. charithonia* feed exclusively on *Passiflora* sp., however larval performance and survival across the diversity of Passion vine species is not well documented. We examined these criteria of zebra longwings from egg to adulthood on two passion vines native to Florida, corky stem (*Passiflora suberosa*) and maypop (*Passiflora incarnata)*, as well as one non-native species, bluecrown (*Passiflora caerulea*). Zebra longwing females were caught in the wild and kept in enclosures to lay their eggs. The eggs from one female were distributed evenly into an enclosure containing one *Passiflora* sp. Overall survival from egg to larvae, larvae to chrysalis, chrysalis to adult, and finally egg to adult will be presented for the three *Passiflora* sp. Forewing length of adults will also be compared between treatments. Preliminary results indicated a potential incompatibility between *H. charithonia* larvae and *Passiflora caerulea*, while the greatest survival occurred with larvae reared on *Passiflora suberosa*.

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